

Corrections to the Draft Nationwide TSCA Permit  
to Dispose of PCBs in the Deactivation Furnace Systems  
of the Army Chemical Demilitarization Facilities

Fibers and Organics Branch  
National Program Chemicals Division  
Office of Pollution Prevention and Toxics  
Office of Prevention, Pesticides and Toxic Substance  
Environmental Protection Agency

March 14, 2002



**The following changes have been implemented to the draft nationwide permit for the Deactivation Furnace Systems (DFSs) located in Chemical Disposal Facilities in Tooele, UT; Anniston, AL; Pine Bluff, AR; and Umatilla, OR.**

Changes and additions to the permit are in **bold text**.

Page 1, Letter of Transmittal, 2<sup>nd</sup> Para.

Deleted:

EPA believes that a coordinated public involvement effort under the Resource Conservation and Recovery Act (RCRA) and TSCA is the most appropriate procedure to follow to present and discuss the various issues involved in permitting these chemical weapons disposal units. Therefore, EPA will make this approval available for public review and comment at each community involved. The timing and extent of public participation will be determined by the EPA Regional office in the Region where the facility is located. A public meeting may be held at the discretion of the EPA Regional office, based on comments received from the public about the operations of the facilities.

Inserted:

**EPA believes that it is important to allow opportunities for public participation in the process of approving these chemical agent weapons disposal units. EPA has held several public meetings in the community surrounding the Tooele, Utah, facility. An initial public meeting was held on August 9, 2001, in Anniston, Alabama. Likewise, EPA will hold initial public meetings in Pine Bluff, Arkansas, and Hermiston, Oregon, where interested parties may present oral or written comments on this approval document as well as available data from the Utah and Alabama facilities. EPA will hold additional public meetings in Alabama, Arkansas and Oregon to receive comments on the trial burn data from each respective facility. EPA may modify the terms and conditions of this approval as a result of this public participation process.**

Page 2, Letter of Transmittal:

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Interim operations (i.e., Post Trial Burn operations) will be determined on the basis of performance results as outlined in Condition 3.

Inserted at Bottom of Page:

**PMCD shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs or greater at ANCDF, PBCDF and UMCDF (CDFs) or Interim Operations without a letter from EPA NPCD authorizing each CDF to dispose of PCBs during the shakedown operations. Condition 1.c of this approval provides details.**

**PERMIT CONDITION CHANGES:**

Page 5, Condition 1:

Changes are in ***bold italicized text***.

1. **Prior Written Notice, Authorized Operations and Public Participation**

Page 6, Top of Page;

- c. ***Authorized Operations: PMCD shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs or greater at ANCDF, PBCDF and UMCDF (CDFs) without a letter from EPA NPCD authorizing each CDF to dispose of PCBs during the shakedown operations. During the shakedown operations, each CDF shall sample the stack emissions as required by Condition 2.b.(3).A, to calculate the PCB destruction and removal efficiency (DRE). Results of this DRE analysis must be received by EPA for review at minimum five days prior to the RCRA Trial Burn. EPA will review these DRE results to determine whether the results complied with the six 9s (99.9999%) DRE PCB incinerator requirement. Upon determination of compliance, EPA will authorize by letter, the continuation of operations after the Trial Burn, termed Post-Trial Burn Operations under RCRA, and designated Interim Operations under TSCA. To clarify, no CDF may continue operations after the Trial Burn unless issued a written authorization by EPA NPCD.***
- d. **Public Participation:** Each affected community must have an opportunity to comment on the PCB issues related to the chemical weapons disposal program.

(1) **Tooele Chemical Agent Disposal Facility, Deseret Chemical Depot, Utah**

***EPA solicited public comments from the community and held several public meetings. EPA has prepared a document responding to the comments received and this document will be made available to the public.***

(2) **Anniston Chemical Agent Disposal Facility, Anniston, Alabama**

***EPA has held an initial public meeting in Anniston, and another public meeting will be held after the results of the Trial Burn are available.***

(5) **Pine Bluff Chemical Agent Disposal Facility, Pine Bluff, Arkansas, and Umatilla Chemical Agent Disposal Facility, Hermiston, Oregon**

*EPA will hold an initial public meeting in each community for the presentation of written or oral comments on this approval document and the data available from the Tooele and Anniston facilities. EPA will hold an additional public meeting in each community after the Trial Burn data from each respective facility become available.*

Page 12, Condition 2.b(3):

- (3) Interim Operations: Disposal operations after the RCRA Trial Burn shall discontinue, contingent upon successful completion of procedures outlined in Paragraph 2.b(3)A below **and shall not continue unless issued a written authorization by EPA NPCD.**

Pages 14 and 15:

Additons are in *bold italicized* text.

c. Anniston Chemical Agent Disposal Facility, Anniston, Alabama

(1) Feedstock Restriction:

A. Rocket Feed Rate: (Reserved)

B. ***ANCDF shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs without a letter from EPA NPCD authorizing ANCDF to dispose of PCBs during the shakedown operations.***

(2) Operating Conditions and Restrictions: (Reserved)

d. Pine Bluff Chemical Agent Disposal Facility, Pine Bluff, Arkansas

(1) Feedstock Restriction:

A. Rocket Feed Rate: (Reserved)

B. ***PBCDF shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs without a letter from EPA NPCD authorizing PBCDF to dispose of PCBs during the shakedown operations.***

(2) Operating Conditions and Restrictions: (Reserved)

e. Umatilla Chemical Agent Disposal Facility, Hermiston, Oregon

(1) Feedstock Restriction:

A. Rocket Feed Rate: (Reserved)

B. *UMCDF shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs without a letter from EPA NPCD authorizing UMCDF to dispose of PCBs during the shakedown operations.*

(2) Operating Conditions and Restrictions: (Reserved)

Page 21, Condition 18, Bottom

**EPA will hold an initial public meeting in each community affected by the additional DFS units and a follow-up meeting after trial burn data from additional units become available.**

Appendix I

Page AI-1, Added Para at Bottom of Page

**M55 Rocket stockpiles are located in Tooele, Utah, Anniston, Alabama, Pine Bluff, Arkansas, and Umatilla, Oregon. The Army plans to operate a DFS at each of these locations for the disposal of M55 Rockets. These DFS facilities are at different stages of construction: the DFS in Utah is operational, the DFS in Alabama will be ready to begin start-up activities shortly, while the facilities in Arkansas and Oregon will not be ready until early in 2003. However, as the DFS facility in each location is intended to be identical in design and operation, EPA is using the nationwide approval process for these facilities. Concentrating the review and approval for these facilities in the National Program Chemicals Division of the Office of Pollution Prevention and Toxics will enable EPA to develop expertise in the complex technical issues involved in the simultaneous destruction of PCBs and chemical agent munitions. The knowledge gained through the start-up and trial burn process at each DFS facility can be accumulated and applied to subsequent DFS facilities. EPA believes that the nationwide approval process, in coordination with the EPA offices in the affected regions, is the best way to ensure that no DFS facility presents an unreasonable risk of injury to health or the environment from PCBs.**

- c. Authorized Operations: PMCD shall not begin M55 rocket disposal operations with firing tubes containing 50 ppm PCBs or greater at ANCDF, PBCDF and UMCDF (CDFs) without a letter from EPA NPCD authorizing each CDF to dispose of PCBs during the shakedown operations. During the shakedown operations, each CDF shall sample the stack emissions as required by Condition 2.b.(3).A, to calculate the PCB destruction and removal efficiency (DRE). Results of this DRE analysis must be received by EPA for review at minimum five days prior to the RCRA Trial Burn. EPA will review this DRE results to determine whether the results complied with the six 9s (99.9999%) DRE PCB incinerator requirement. Upon determination of compliance, EPA will authorize by letter, the continuation of operations after the Trial Burn, termed Post-Trial Burn Operations under RCRA, and designated Interim Operations under TSCA. To clarify, no CDF may continue operations after the Trial Burn unless issued a written authorization by EPA NPCD.

(1) Tooele Chemical Agent Disposal Facility, Deseret Chemical Depot, Utah

EPA solicited public comments from the community and held several public meetings. EPA has prepared a document responding to the comments received and this document will be made available to the public.

(2) Anniston Chemical Agent Disposal Facility, Anniston, Alabama

EPA has held an initial public meeting in Anniston, and another public meeting will be held after the results of the trial burn are available.

(3) Pine Bluff Chemical Agent Disposal Facility, Pine Bluff, Arkansas, and Umatilla Chemical Agent Disposal Facility, Hermiston, Oregon

EPA will hold an initial public meeting in each community, for the presentation of written or oral comments on this approval document and the data available from the Tooele and Anniston facilities. EPA will hold an additional public meeting in each community after the trial burn data from each respective facility becomes available.

2. Operating Conditions: PMCD and System Contractor may use the PMCD DFS to destroy PCB-contaminated shipping and firing tubes containing chemical and nerve agent rockets, limited to the M441 shipping/firing tubes, under the following operating conditions. These conditions are based on the Army's results from the TOCDF Trial Burn II completed in November 1998. That trial burn indicated that the TSCA incinerator requirements for 99.9999% destruction and removal efficiency (six 9s DRE) of PCBs were achieved. PCB emission rates were at minimum an order of magnitude lower than the health risk assessment (HRA). Dioxins and furans were not detected in the stack samples.

a. **Tooele Chemical Agent Disposal Facility, Deseret Chemical Depot, Utah**

Operation of the TOCDF DFS is subject to the conditions expressed herein, and must be consistent with the materials and data included in the Army application "Preliminary Operating Permit Application, for the Department of the Army Tooele Army Depot, Chemical Agent Disposal Facility, Submitted to Division Director, National Programs Chemicals Division, Office of Pollution Prevention and Toxics, Washington, D.C." dated July 1993; "R&D Test Plan, PCB Destruction Unit Deactivation Furnace System (DFS), Final, Facility Operator," dated November 27, 1995; "Tooele Chemical Agent Disposal Facility (TOCDF), DFS TSCA Demonstration Test Burn Report for the Deactivation Furnace System, EG&G Defense Material, Inc., April 24, 1997;" and "Tooele Chemical Agent Disposal Facility (TOCDF), RCRA Agent GB Trial Burn #2 Report for the Deactivation Furnace System, Rev. 0, EG&G Defense Material, Inc., February 16, 1999."

Target Values: For this approval, Target Values are the desired operating condition for the parameters specified. These Target Values are based on the average values demonstrated during the DFS RCRA/TSCA Trial Burn of 1997 and Trial Burn II of 1998. The process value may deviate from the Target Value within the Process Limits whenever minor operational upsets occur; however, the process value should generally exhibit the Target Value and the instrument setting for the specified parameter should generally be kept at the Set Point.

Set Points: For this approval, EPA has defined set points as the value of incinerator process control setting that achieves the Target Values.

Process Limits: Process Limits are placed such that whenever the process value deviates from the Target Values during major operational upsets, an Automatic Waste Feed Cut Off (AWFCO) is activated. However, the Process Limits should be placed such that a minor operational upset will not activate the AWFCO.

- (1) Regulatory Interlocks: Feed to the DFS shall immediately be shut off automatically for:
  - A. Failure of the monitoring operations specified in Condition 5d through 5f.
  - B. Failure of the recording equipment monitoring the PCB feed rate and quantity measuring and recording equipment failing as specified in Condition 5.a, must be immediately replaced by manual recording of the PCB feed rate.
- (2) Operating Conditions and Operational Interlocks: The TOCDF DFS incinerator shall operate at the following conditions (including Table A) whenever PCBs are being incinerated:
  - A. Rocket Feed Rate:
    - i. At rocket feed rates of 16 rockets per hour or greater (rolling hourly total), the Retort (kiln) Post-Quench Exhaust Gas Temperature (16-TIC-008)\* Target Value is 1450°F. An automatic waste feed cutoff

(AWFCO) with a 5-minute delay at  $< 1000^{\circ}\text{F}$  and  $> 1570^{\circ}\text{F}$ , and instantaneous AWFCOs at  $< 850^{\circ}\text{F}$  and  $> 1650^{\circ}\text{F}$  shall be in place.

\* Items in parenthesis are instrument TAG numbers (16-xxx-xxx). These are identified because many instrument readings have multiple sources. See TOCDF Operation Manual or access website [http://www.deq.state.ut.us/eqshw/cds/T\\_Permit/ATCH19.pdf](http://www.deq.state.ut.us/eqshw/cds/T_Permit/ATCH19.pdf)."

- ii At rocket feed rates of less than 16 rockets per hour (rolling hourly total), the Retort shall operate within instantaneous AWFCOs at  $< 850^{\circ}\text{F}$  and  $> 1650^{\circ}\text{F}$ .
  - iii Rocket feed rate Target is 33 rockets per hour with a 5-minute delay AWFCO at a feed rate greater than 3 rocket/5 minute and an instantaneous AWFCO at 33 rocket per hour rolling average.
- B. Retort Oscillation on AWFCO. Whenever an automatic feed shutdown occurs requiring retort oscillation, with rocket parts remaining between the sliding gate and the tip gate, the tip gate will be opened to release the rocket parts with the retort rotating for a minimum of 30 seconds prior to activating the oscillation phase.
- C. The Heated Discharge Conveyor (HDC) Bottom Temperature (16-TIT-042)\* Target Value is  $1080^{\circ}\text{F}$ . An AWFCO with a 5-minute delay at  $< 1020^{\circ}\text{F}$  and  $> 1110^{\circ}\text{F}$ , and an instantaneous AWFCO at  $< 1000^{\circ}\text{F}$  and  $> 1150^{\circ}\text{F}$  shall be in place to minimize metals vaporization.
- D. The Heated Discharge Conveyor (HDC) Top Temperature (16-TIT-184)\* Target Value shall be  $1096^{\circ}\text{F}$ . An AWFCO with a 5-minute delay at  $< 1060^{\circ}\text{F}$  and  $> 1130^{\circ}\text{F}$ , and an instantaneous AWFCO at  $< 1000^{\circ}\text{F}$  and  $> 1150^{\circ}\text{F}$  shall be in place to minimize metals vaporization.
- E. The Heated Discharge Conveyor Residence Time is nominally 19 minutes. A 5-minute delay AWFCO for HDC malfunctions shall be in place when the residence time decreases to 15 minute or below.
- F. The Retort Rotational Speed (16-ZX-602)\* Target Value shall be 1.9 rpm. An instantaneous AWFCO shall be at 2 rpm and at 0.33 rpm. Whenever the following instantaneous AWFCOs are triggered, the retort shall activate the oscillation mode:
- i. Heated Discharge Conveyor Temperature, Bottom (16-TALL-042)\*
  - ii. Heated Discharge Conveyor Temperature, Top (16-TALL-184)\*
  - iii. HDC Malfunction (16-SSL-057)\*
  - iv. HDC Tip Gate Jam (16-XS-058)\*
  - v. HDC Slide Gate Jam (16-XS-821)\*
  - vi. Kiln Speed Greater than 2 rpm (16-SAHH-602)\*
  - vii. Kiln Pre-Quench Temp. Less than  $950^{\circ}\text{F}$  (16-TALL-182)\*
  - viii. Kiln Post-Quench Exhaust Gas Temp. Less than  $850^{\circ}\text{F}$  (16-TALL-008)\*

The retort shall continue to rotate whenever any other AWFCO activates.

- G. Afterburner Exhaust Temperature (16-TIC-092)\*:



- i. When feeding rockets at 16 rockets per hour or greater, the Afterburner Exhaust Gas Temperature Target Value shall be 2150°F, with a 5-minute delay AWFCO at < 2125°F and instantaneous AWFCOs at < 2050°F and > 2350°F.
  - ii. When feeding rockets at less than 16 rockets per hour, the Afterburner Exhaust Gas Temperature Target Value shall be 2150°F with a 5-minute delay AWFCO at < 2135°F and instantaneous AWFCOs at < 2050°F and > 2350°F.
  - iii. Rocket feed rate Target is 33 rockets per hour with a 5-minute delay AWFCO at a feed rate greater than 3 rocket/5 minute and an instantaneous AWFCO at 33 rocket per hour rolling average.
- H. The Afterburner Exhaust Gas CO (16-AIT-059, 24-AIT-207)\* Target Value is 8 ppm, adjusted to 7% O<sub>2</sub>. There shall be a 5-minute delay AWFCO at > 100 ppm, adjusted to 7% O<sub>2</sub>, and an instantaneous AWFCO at 200 ppm, adjusted to 7% O<sub>2</sub>.
- I. The Residence Time in the Afterburner (AB) Exhaust shall be no less than 2 seconds as monitored by Afterburner Exhaust Velocity Head (24-PDIT-813)\* with a Target Value of 0.6" water column (w.c.). There shall be an AWFCO with a 5-minute delay at > 0.88" w.c. and an instantaneous AWFCO at > 0.93" w.c.
- J. The Afterburner Exhaust Gas Excess Oxygen (O<sub>2</sub>) (16-AIT\_175, 24-AIT-206)\* with Target Value is 10%. There shall be a 5-minute delay AWFCO at < 7.5%, and an instantaneous AWFCO at < 3.0% and > 15%.
- K. The Retort Pressure (16-PIT-018)\* Target Value is -0.50" w.c. There shall be an AWFCO at -0.10" w.c. with a 10-second delay and an instantaneous AWFCO at 0." The Retort Pressure is an indicator of draft pressure throughout the combustion/air pollution abatement system. The PMCD/System Contractor must maintain a negative draft throughout the system sufficient to preclude fugitive emissions from the combustion chambers.
- L. The Venturi Scrubber Brine Pressure Drop (24-PDIT-008)\* Target Value is 30" w.c. There shall be a 5-minute delay AWFCO at < 23" w.c., with an instantaneous AWFCO at < 20" w.c.
- M. The Venturi Brine Flow (24-FIT-006)\* Target Value is 325 gpm with an instantaneous AWFCO set at < 300 gpm.
- N. The Target Value for the Scrubber Tower Liquid Feed Rate (24-FIT-030)\* is 1000 gpm with a < 750 gpm instantaneous cutoff.
- O. The Target Value for the Scrubber Effluent Brine pH (24-AIC-007)\* is 9. There shall be a 5-minute delay AWFCO at < 7.
- P. The Target Value for the Scrubber Brine Density (24-DIT-033)\* is 1.10 specific gravity unit (sgu). There shall be an instantaneous AWFCO at > 1.20.

- Q. The Combustion Efficiency (16-AIT-781, 16-AIT-781B)\* AWFCO for the afterburner is > 99.90% with a 5-minute delay.
- R. Instantaneous AWFCO on failure of Rotary Blowers to primary combustion air.
- S. The Induce Draft (I.D.) Fan Current usage shall be nominal 315 amps with a 5-minute delay with an instantaneous cutoff at 540 amps.
- T. Instantaneous AWFCO on I.D. Fan malfunction for both ID fans.
- U. During Compliance Testing and Trial Burns,

- i) stack sampling analysis must indicate that the Destruction and Removal Efficiency (DRE) for PCBs in the PMCD/System Contractor system shall be a minimum of 99.9999%. DRE shall be calculated as follows:

$$DRE = 100 \times \frac{\text{PCB Feed Rate In, lb/hr} - \text{PCB Stack Emissions, lb/hr}}{\text{PCB Feed Rate In, lb/hr}}$$

where PCB Feed Rate In = Feed Rate X PCB concentration;  
and PCB Stack Emissions = Stack Gas Volume Rate X PCB concentration

- ii The particulate emission rate shall be less than 0.08 grains/dscf corrected to 7% oxygen using the procedure given in 40 CFR 264.343 (c). The HCl emissions shall be less than the greater quantity of 4 pounds per hour or one percent of the HCl entering the pollution control system.